

Simultaneous detection of potato virus S and potato virus X using a multiplex real-time PCR

Potato virus S (PVS) and potato virus X (PVX), is a single-stranded, positive-sensed RNA virus that is a member of the genus *Carlavirus* in the family of the *Betaflexiviridae*. PVS has a narrow host range, and susceptible species mainly belong to the *Solanaceae* and *Chenopodiaceae* (e.g. quinoa). PVS can be transmitted by aphids, mechanically, and by vegetative propagation of tubers. PVS is very common in potato fields and has a worldwide distribution. The symptoms caused by PVS are mild and result in minor yield losses in most cases. However, in mixed infection, with PVX, for instance, more severe symptoms may occur (1,2).



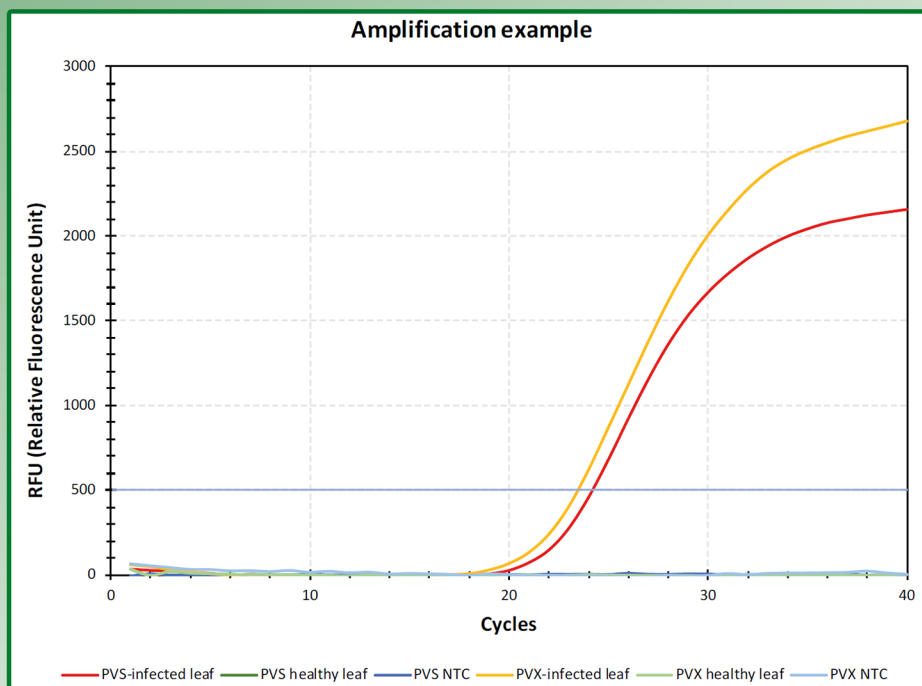
Potato virus X (PVX), is an RNA-virus with a single-stranded, positive-sensed genome, belonging to the Potexviruses in the family of the *Alphaflexiviridae*. PVX is one of the oldest known potato viruses and is typically transmitted via pollen or true seed, by contaminated farming equipment, or from plant to plant by contact (3). The primary host of PVX is potato, but the virus infects a wide range of dicots. PVX commonly occurs in potatoes worldwide and is known to confer severe disease when it occurs in mixed infections with other viruses, especially potyviruses such as potato virus Y or potato virus A, causing tuber yield losses of up to 80% (2,3).

With the BIOREBA PVS/PVX qPCR kit, you can simultaneously detect PVS and PVX infections in a fast and reliable way.

qPCR PVS/PVX kit

Your Benefits:

- One-step triplex real-time RT-PCR
- For PVS/PVX detection in potato leaves and tubers
- Including an internal control (IPC)
- Developed and validated by BIOREBA
- Fast and reliable protocol
- Increased test security due to lot-to-lot consistency
- Cost effective
- Time saving



Graph shows the amplification curve of PVS- and PVX-infected leaf samples. Healthy control samples and "no template controls" (NTCs) show no amplification.

Set format and content:

Sales Part No.	Product name	Colour of screw cap	Name	Volume
859600	qPCR PVS/PVX set 96	Blue	Taq Master Mix (2x) Art. No. 831412	1.2 ml
		Yellow	RT Master Mix (50x) Art. No. 830414	0.05 ml
		Clear	Primers/Probes/IC Mix_PVS/PVX/IC (10x) Art. No. 850100	0.2 ml
		—	Nuclease-free water Art. No. T143.4	1 ml
		—	PVS and PVX RNA positive control (PC) Art. No. 850053	30 µl
		—	Plant RNA negative control (NC) Art. No. 830043	30 µl
859200	qPCR PVS/PVX set 192	Blue	Taq Master Mix (2x) Art. No. 831412	2 x 1.2 ml
		Yellow	RT Master Mix (50x) Art. No. 830414	2 x 0.05 ml
		Clear	Primers/Probes/IC Mix_PVS/PVX/IC (10x) Art. No. 850100	2 x 0.2 ml
		—	Nuclease-free water Art. No. T143.4	2 x 1 ml
		—	PVS and PVX RNA positive control (PC) Art. No. 850053	30 µl
		—	Plant RNA negative control (NC) Art. No. 830043	30 µl

References:

- (1) Chikh-Ali M, Karasev A V. Virus diseases of potato and their control. Potato Production Worldwide. 2023 Jan 1;199–212.
- (2) Campos H, Ortiz O. The potato crop: Its agricultural, nutritional and social contribution to humankind. The Potato Crop: Its Agricultural, Nutritional and Social Contribution to Humankind. Springer International Publishing; 2019. 1–518 p.
- (3) Verchot J. Potato virus X: A global potato-infecting virus and type member of the Potexvirus genus. Mol Plant Pathol. 2022 Mar 1;23(3):315–20.



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